IN THE CLAIMS:

1.-9. (Cancelled)

10. (Previously Presented) A broadcast apparatus for multiplexing and broadcasting program data which is to be reproduced by a reception apparatus soon after receipt and additional data which corresponds to the program data, the broadcast apparatus comprising:

acquiring means for acquiring first program data, a first additional data group including at least first additional data corresponding to the first program data, a broadcast time period of the first program data, and second program data which is to be broadcast before the first program data;

multiplexing means for repeatedly multiplexing the first additional data group with the second program data from a specific time to a start of the broadcast time period and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period, the specific time being a point in time before the start of the broadcast time period, and a time period between the specific time and the start of the broadcast time period being a predetermined time period;

broadcasting means for broadcasting the data multiplexed by the multiplexing means;

cache instruction broadcasting means for broadcasting a cache instruction before the start of the reproduction time period, the cache instruction instructing the reception apparatus to cache only the first additional data; and

use instruction broadcasting means for broadcasting a use instruction after the start of the reproduction time period, the use instruction instructing the reception apparatus to

use, when the first additional data has been cached according to the cache instruction, the cached additional data.

11. (Previously Presented) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data, and

the multiplexing means repeatedly multiplexes a second additional data group including at least the second additional data with the second program data until the specific time.

12. (Previously Presented) The broadcast apparatus of claim 11, wherein

the multiplexing means performs the multiplexing for the second additional data group on a predetermined bandwidth until the specific time and performs the multiplexing for the first additional data group on the predetermined bandwidth from the specific time.

13. (Previously Presented) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data, and

the multiplexing means repeatedly multiplexes a second additional data group including at least the second additional data with the second program data until the start of the broadcast time period.

14. (Original) The broadcast apparatus of claim 13,

wherein the multiplexing means performs the multiplexing for the second additional data on a predetermined bandwidth until the specific time and performs the

multiplexing for the second additional data and the first additional data on the predetermined bandwidth from the specific time to the start of the broadcast time period.

15. (Previously Presented) The broadcast apparatus of claim 13,

wherein the multiplexing means performs the multiplexing for the second additional data group on a predetermined bandwidth until the specific time and performs the multiplexing for the second additional data group on the predetermined bandwidth from the specific time to the start of the broadcast time period.

16. (Cancelled)

17. (Previously Presented) The broadcast apparatus of claim 10, wherein

the cache instruction broadcasting means broadcasts the cache instruction to instruct the reception apparatus to perform the caching by accumulating only the first additional data, and

the use instruction broadcasting means broadcasts the use instruction to instruct the reception apparatus to use, (a) when the first additional data has been accumulated according to the cache instruction, the accumulated first additional data, and (b) when the first additional data has not been accumulated according to the cache instruction, the first additional data broadcast by the broadcasting means.

18. (Previously Presented) The broadcast apparatus of claim 10, wherein

the cache instruction broadcasting means broadcasts the cache instruction to instruct the reception apparatus to perform the caching by storing the first additional data into a

cache memory when the first additional data has been stored in a predetermined storage medium, and

the use instruction broadcasting means broadcasts the use instruction to instruct the reception apparatus to use, (a) when the first additional data has been stored in the cache memory according to the cache instruction, the first additional data stored in the cache memory, and (b) when the first additional data has not been stored in the cache memory according to the cache instruction, the first additional data stored in the predetermined storage medium.

19. (Original) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data and a broadcast time period of the second program data, the broadcast apparatus further comprises judging means for judging whether the broadcast time period of the second program data is longer than a predetermined criterion time period, and

the multiplexing means,

(a) when the judging means judges that the broadcast time period of the second program data is longer than the predetermined criterion time period, repeatedly multiplexes the second additional data with the second program data until the specific time, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data, and

(b) when the judging means judges that the broadcast time period of the second program data is no longer than the predetermined criterion time period, repeatedly

multiplexes the second additional data with the second program data until the specific time, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data.

20. (Original) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data and a broadcast time period of the second program data,

the broadcast apparatus further comprises judging means for judging whether the broadcast time period of the second program data is longer than a predetermined criterion time period, and

the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth,

(b) when the judging means judges that the broadcast time period of the second program data is longer than the predetermined criterion time period, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a bandwidth for the first additional data is allocated to the predetermined bandwidth, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data, and

(c) when the judging means judges that the broadcast time period of the second program data is no longer than the predetermined criterion time period, so that a total bandwidth for the second additional data and the first additional data is allocated to the predetermined bandwidth, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data.

21. (Original) The broadcast apparatus of claim 10, wherein

the first additional data acquiring means further acquires second additional data corresponding to the second program data and a broadcast time period of the second program data,

the broadcast apparatus further comprises judging means for judging whether the broadcast time period of the second program data is longer than a predetermined criterion time period, and

the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth,

(b) when the judging means judges that the broadcast time period of the second program data is longer than the predetermined criterion time period, so that a bandwidth for the first additional data is allocated to the predetermined bandwidth, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the

broadcast time period of the first program data and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data, and

(c) when the judging means judges that the broadcast time period of the second program data is no longer than the predetermined criterion time period, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a total bandwidth for the second additional data and the first additional data is increased by adding a bandwidth for the first additional data to the predetermined bandwidth and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data so that a bandwidth for the first additional data is allocated to the predetermined bandwidth.

22. (Previously Presented) The broadcast apparatus of claim 19, wherein,

when the judging means judges that the broadcast time period of the second time period of the second program data is no longer than the predetermined criterion time period, the multiplexing means repeatedly multiplexes the second additional data and the first additional data with the second program data during the broadcast time period of the second program data.

23. (Previously Presented) The broadcast apparatus of claim 19, further comprising:

criterion time period determining means for determining the predetermined criterion time period to be used by the judging means by multiplying a time period of a broadcast cycle of additional data by a predetermined coefficient.

24. (Original) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data and a broadcast time period of the second program data, the second additional data is updated during the broadcast time period of the second program data,

the broadcast apparatus further comprises judging means for judging whether a time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is longer than a predetermined criterion time period, and

the multiplexing means,

(a) when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is longer than the predetermined criterion time period, repeatedly multiplexes the second additional data with the second program data until the specific time, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data, and

(b) when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is no longer than the predetermined criterion time period, repeatedly multiplexes the second additional data with the second program data until the specific time, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data.

25. (Original) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data and a broadcast time period of the second program data, the second additional data is updated during the broadcast time period of the second program data,

the broadcast apparatus further comprises judging means for judging whether a time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is longer than a predetermined criterion time period, and

the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth,

(b) when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is longer than the predetermined criterion time period, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a bandwidth, for the first additional data is allocated to the predetermined bandwidth and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data, and

(c) when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is no longer than the predetermined criterion time period, repeatedly multiplexes the second additional data and the first additional data with the second! program data from the specific time to the start of the broadcast time period of the first program data so that a total bandwidth for the

second additional data and the first additional data is allocated to the predetermined bandwidth and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data.

26. (Original) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data and a broadcast time period of the second program data,

the second additional data is updated during the broadcast time period of the second program data,

the broadcast apparatus further comprises judging means for judging whether a time period from a last update time of the second additional data to the start of the broadcast time period of the first program data is longer than a predetermined criterion time period, and

the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth,

(b) when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is longer than the predetermined criterion time period, so that a bandwidth for the first additional data is allocated to the predetermined bandwidth, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data, and

(c) when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is no longer than the predetermined criterion time period, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a total bandwidth for the second additional data and the first additional data is increased by adding a bandwidth for the first additional data to the predetermined bandwidth and repeatedly multiplexes the first additional data with the first program data during the broadcast time period of the first program data so that a bandwidth for the first additional data is allocated to the predetermined bandwidth.

27. (Previously Presented) The broadcast apparatus of claim 24,

wherein, when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is no longer than the predetermined criterion time period, the multiplexing means repeatedly multiplexes the second additional data and the first additional data with the second program data during the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data.

28. (Previously Presented) The broadcast apparatus of claim 24, further comprising:

criterion time period determining means for determining the predetermined criterion time period to be used by the judging means by multiplying a time period of a broadcast cycle of additional data by a predetermined coefficient.

29. (Original) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second! program data, the broadcast apparatus further comprises judging means for judging whether the broadcast time period is shorter than a predetermined criterion time period, and the multiplexing means,

(a) when the judging means judges that the broadcast time period is shorter than the predetermined criterion time period, repeatedly multiplexes the second additional data with the second program data until the specific time, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period, and

(b) when the judging means judges that the broadcast time period is no shorter than the predetermined criterion time period, repeatedly multiplexes the second additional data with the second program data until the start of the broadcast time period and repeatedly multiplexes the first additional data with the first program data during the broadcast time period.

30. (Original) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data, the first additional data is updated during the broadcast time period of the first program data,

the broadcast apparatus further comprises judging means for judging whether a time period from the start of the broadcast time period to the first update time of the first additional data is longer than a predetermined criterion time period, and

the multiplexing means,

(a) when the judging means judges that the time period from the start of the broadcast time period to the first update time of the first additional data is shorter than the predetermined criterion time period, repeatedly multiplexes the second additional data with the second program data until the specific time, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period, and

(b) when the judging means judges that the time period from the start of the broadcast time period to the first update time of the first additional data is no shorter than the predetermined criterion time period, repeatedly multiplexes the second additional data with the second program data until the start of the broadcast time period and repeatedly multiplexes the first additional data with the first program data during the broadcast time period.

31. (Previously Presented) The broadcast apparatus of claim 29 further comprising:

criterion time period determining means for determining the predetermined criterion time period to be used by the judging means by multiplying a time period of a broadcast cycle of additional data by a predetermined coefficient.

32. (Previously Presented) The broadcast apparatus of claim 10, wherein

the acquiring means further acquires second additional data corresponding to the second program data,

the broadcast apparatus has judgment information which indicates whether the multiplexing for the first additional data is to be started previous to the start of the broadcast time period, and

the multiplexing means,

(a) when the judgment information indicates that the multiplexing is to be started previously, repeatedly multiplexes the second additional data with the second program data until the specific time, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period, and repeatedly multiplexes the first additional data with the first program data during the broadcast time period, and

(b) when the judgment information indicates that the multiplexing is not to be started previously, repeatedly multiplexes the second additional data with the second program data until the start of the broadcast time period and repeatedly multiplexes the first additional data with the first program data during the broadcast time period.

33. (Previously Presented) A broadcast apparatus for multiplexing and broadcasting program data which is to be reproduced by a reception apparatus soon after receipt and additional data corresponding to the program data, the broadcast apparatus comprising:

acquiring means for acquiring first program data, a first additional data group including at least first additional data corresponding to the first program data, a broadcast time period of the first program data, second program data to be broadcast before the first program data, second additional data corresponding to the second program data, and a broadcast time period of the second program data;

judging means for judging, for each of the broadcast time period of the first program data and the broadcast time period of the second program data, whether the broadcast time period is shorter than a predetermined criterion time period;

multiplexing means for,

(a) in a first case where the broadcast time period of the first program data is shorter than the predetermined criterion time period and the broadcast time period of the second program data is no shorter, than the predetermined criterion time period, repeatedly multiplexing the second additional data with the second program data until a specific time, repeatedly multiplexing the first additional data group with the second program data from the specific time to a start of the broadcast time period of the first program data, and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period of the first program data, the specific time being a point in time before the start of the broadcast time period of the first program data, and a time period between the specific time and the start of the broadcast time period of the first program data being a predetermined time period,

(b) in a second case where the broadcast time period of the first program data and the broadcast time period of the second program data are each shorter than the predetermined criterion time period, repeatedly multiplexing the second additional data and the first additional data group with the second program data from the specific time to the start of the broadcast time period of the first program data and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period of the first program data, and

(c) in a third case where the broadcast time period of the first program data is no shorter than the predetermined criterion time period, regardless of whether the broadcast time

period of the second program data is shorter than the predetermined criterion time period, repeatedly multiplexing the second additional data with the second program data until the start of the broadcast time period of the first program data and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period of the first program data; and

broadcasting means for broadcasting the data multiplexed by the multiplexing means;

cache instruction broadcasting means for broadcasting a cache instruction before the start of the reproduction time period, the cache instruction instructing the reception apparatus to cache only the first additional data; and

use instruction broadcasting means for broadcasting a use instruction after the start of the reproduction time period, the use instruction instructing the reception apparatus to use, when the first additional data has been cached according to the cache instruction, the cached additional data.

34. (Original) The broadcast apparatus of claim 33, wherein the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth,

(b) in the first case, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a bandwidth for the first additional data is allocated to the predetermined bandwidth, and

(c) in the second case, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a total bandwidth for the first additional data and the first additional data is allocated to the predetermined bandwidth.

35. (Original) The broadcast apparatus of claim 33, wherein the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth,

(b) in the first case, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a bandwidth for the first additional data is allocated to the predetermined bandwidth,

and

(c) in the second case, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a total bandwidth for the first additional data and the first additional data is increased by adding a bandwidth for the first additional data to the predetermined bandwidth.

36. (Previously Presented) A broadcast apparatus for multiplexing and broadcasting program data which is to be reproduced by a reception apparatus soon after receipt and additional data which corresponds to the program data, the broadcast apparatus comprising:

acquiring means for acquiring first program data, a first additional data group including at least first additional data corresponding to the first program data, a broadcast time

period of the first program data, second program data which is to be broadcast before the first program data, and second additional data corresponding to the second program data;

accepting means for accepting, from an outside, judgment on whether multiplexing for the first additional data group is to be started at a specific time or a start time of the broadcast time period, the specific time being a point in time before the start of the broadcast time period, and a time period between the specific time and the start of the broadcast time period being a predetermined time period;

multiplexing means for,

(a) in a first case that the accepting means accepts judgment that the multiplexing for the first additional data group is to be started at the specific time, repeatedly multiplexing the second additional data with the second program data until the specific time, repeatedly multiplexing the first additional data group with the second program data from the specific time to the start of the broadcast time period, and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period, and

(b) in a second case that the accepting means accepts judgment that the multiplexing for the first additional data group is to be started at the start time, repeatedly multiplexing the second additional data with the second program data until the start of the broadcast time period, repeatedly multiplexing the first additional data group with the second program data from the specific time to a start of the broadcast time period of the first program data, and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period;

broadcasting means for broadcasting the data multiplexed by the multiplexing means;

cache instruction broadcasting means for broadcasting a cache instruction before the start of the reproduction time period, the cache instruction instructing the reception apparatus to cache only the first additional data; and

use instruction broadcasting means for broadcasting a use instruction after the start of the reproduction time period, the use instruction instructing the reception apparatus to use, when the first additional data has been cached according to the cache instruction, the cached additional data.

37. (Original) The broadcast apparatus of claim 36, wherein the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth, and

(b) in the first case, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period of the first program data so that a bandwidth for the first additional data is allocated to the predetermined bandwidth.

38. (Previously Presented) A broadcast apparatus for multiplexing and broadcasting program data which is to be reproduced by a reception apparatus soon after receipt and additional data which corresponds to the program data, the broadcast apparatus comprising:

acquiring means for acquiring first program data, a first additional data group including at least first additional data corresponding to the first program data, a broadcast time period of the first program data, second program data which is to be broadcast before the first program data, and second additional data corresponding to the second program data;

accepting means for accepting, from an outside, judgment on whether multiplexing for the second additional data is to be continued until the start of the broadcast time period;

multiplexing means for,

(a) in a first case that the accepting means accepts judgment that the multiplexing for the second additional data is not to be continued until the start of the broadcast time period, repeatedly multiplexing the second additional data with the second program data until the specific time, repeatedly multiplexing the first additional data group with the second program data from the specific time to the start of the broadcast time period, and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period, and

(b) in a second case that the accepting means accepts judgment that multiplexing for the second additional data is to be continued until the start of the broadcast time period, repeatedly multiplexing the second additional data and the first additional data group with the second program data from the specific time to the start of the broadcast time period and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period;

broadcasting means for broadcasting the data. multiplexed by the multiplexing means;

cache instruction broadcasting means for broadcasting a cache instruction before the start of the reproduction time period, the cache instruction instructing the reception apparatus to cache only the first additional data; and

use instruction broadcasting means for broadcasting a use instruction after the start of the reproduction time period, the use instruction instructing the reception apparatus to use, when the first additional data has been cached according to the cache instruction, the cached additional data.

39. (Original) The broadcast apparatus of claim 38, wherein the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth,

(b) in the first case, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period so that a bandwidth for the first additional data is allocated to the predetermined bandwidth, and

(c) in the second case, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period so that a total bandwidth for the first additional data and the first additional data is increased by adding a bandwidth for the first additional data to the predetermined bandwidth.

40. (Original) The broadcast apparatus of claim 38, wherein the multiplexing means

(a) repeatedly multiplexes the second additional data with the second program data until the specific time so that a bandwidth for the second additional data is allocated to a predetermined bandwidth,

(b) in the first case, repeatedly multiplexes the first additional data with the second program data from the specific time to the start of the broadcast time period so that a bandwidth for the first additional data is allocated to the predetermined bandwidth, and

(c) in the second case, repeatedly multiplexes the second additional data and the first additional data with the second program data from the specific time to the start of the broadcast time period so that a total bandwidth for the first additional data and the first additional data is increased by adding a bandwidth for the first additional data to the predetermined bandwidth.

41. (Previously Presented) The broadcast apparatus of claim 36,

wherein the accepting means further accepts, from the outside, an indication of the predetermined time period.

42.-44. (Cancelled)

45. (Previously Presented) A reception apparatus for receiving multiplexed data which is made up of program data which is to be reproduced by a reception apparatus soon after receipt and additional data which corresponds to the program data so that a total bandwidth is allocated to a predetermined bandwidth, the reception apparatus comprising:

receiving means for receiving

first multiplexed data transmitted by (a) repetitively multiplexing, from a point of a predetermined time period before a start of a broadcast time period for first program data to an end of a broadcast time period for second program data, an additional data group including first additional data that corresponds to the first program data with the second program data, and (b) singly multiplexing, with the multiplexed additional data group and second program, a cache

instruction instructing to cache only the first additional data, the second program data being reproduced before the first program data, and

second multiplexed data transmitted by (a) repetitively multiplexing the first additional data group with the first program data, during the broadcast time period and (b) singly multiplexing a use instruction with the multiplexed first additional data group and first program data, the use instruction instructing to use, (i) when the first additional data has been cached, the cached first additional data, and (ii) when the first additional data has not been cached, the received first additional data;

reproducing means for reproducing the first program data of the first multiplexed data during the broadcast time period for the first program data;

caching means for caching, when the receiving means receives the first additional data of the first multiplexed data, the first additional data according to the cache instruction; and

using means for using, according to the use instruction during the broadcast time period, (a) when the first additional data has been cached, the cashed first additional data, and (b) when the first additional data has not been cached, the first additional data of the second multiplexed data.

46. (Cancelled)

47. (Previously Presented) The reception apparatus of claim 45, wherein

the receiving means further receives

a cache instruction to cache the first additional data when the first additional data has been stored in a predetermined storage medium before the start of the broadcast time period and

a use instruction to use, during the broadcast time period, (a) when the first additional data has been stored in the cache memory, the first additional data stored in the cache memory and (b) when the first additional data has not been stored in the cache memory, the first additional data received by the receiving means or the first additional data stored in the predetermined storage medium,

the caching means stores only the first additional data into the cache memory before the start of the broadcast time period, according to the cache instruction, and

the using means uses, during the broadcast time period, (a) when the first additional data has been stored in the cache memory, the first additional data stored in the cache memory, and (b) when the first additional data is not stored in the cache memory, the first additional data stored in the predetermined storage medium or the first additional data received by the receiving means, according to the use instruction.

48. (Cancelled)

49. (Previously Presented) A broadcast method for multiplexing and broadcasting program data which is to be reproduced by a reception apparatus soon after receipt and additional data which corresponds to the program data, the broadcast method comprising:

an acquiring step for acquiring first program data, a first additional data group including at least first additional data corresponding to the first program data, a broadcast time period of the first program data, and second program data which is to be broadcast before the first program data;

a multiplexing step for repeatedly multiplexing the first additional data group with the second program data from a specific time to a start of the broadcast time period and

repeatedly multiplexing the first additional data group with the first program data during the broadcast time period, the specific time being a point in time before the start of the broadcast time period, and a time period between the specific time and the start of the broadcast time period being a predetermined time period;

a broadcasting step for broadcasting the data multiplexed in the multiplexing step;

cache instruction broadcasting step for broadcasting a cache instruction before the start of the reproduction time period, the cache instruction instructing the reception apparatus to cache only the first additional data; and

use instruction broadcasting step for broadcasting a use instruction after the start of the reproduction time period, the use instruction instructing the reception apparatus to use, when the first additional data has been cached according to the cache instruction, the cached additional data.

50. (Previously Presented) A broadcast method for multiplexing and broadcasting program data which is to be reproduced by a reception apparatus soon after receipt and additional data corresponding to the program data, the broadcast method comprising:

an acquiring step for acquiring first program data, a first additional data group including at least first additional data corresponding to the first program data, a broadcast time period of the first program data, second program data to be broadcast before the first program data, second additional data corresponding to the second program data, and a broadcast time period of the second program data;

a judging step for judging, for each of the broadcast time period of the first program data and the broadcast time period of the second program data, whether the broadcast time period is shorter than a predetermined criterion time period;

a multiplexing step for,

(a) in a first case where the broadcast time period of the first program data is shorter than the predetermined criterion time period and the broadcast time period of the second program data is no shorter than the predetermined criterion time period, repeatedly multiplexing the second additional data with the second program data until a specific time, repeatedly multiplexing the first additional data group with the second program data from the specific time to a start of the broadcast time period of the first program data, and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period of the first program data, the specific time being a point in time before the start of the broadcast time period of the first program data, and a time period between the specific time and the start of the broadcast time period of the first program data being a predetermined time period,

(b) in a second case where the broadcast time period of the first program data and the broadcast time period of the second program data are each shorter than the predetermined criterion time period, repeatedly multiplexing the second additional data and the first additional data group with the second program data from the specific time to the start of the broadcast time period of the first program data and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period of the first program data, and

(c) in a third case where the broadcast time period of the first program data is no shorter than the predetermined criterion time period, regardless of whether the broadcast time

period of the second program data is shorter than the predetermined criterion time period, repeatedly multiplexing the second additional data with the second program data until the start of the broadcast time period of the first program data and repeatedly multiplexing the first additional data with the first program data during the broadcast time period of the first program data; and

a broadcasting step for broadcasting the data multiplexed in the multiplexing step;

cache instruction broadcasting step for broadcasting a cache instruction before the start of the reproduction time period, the cache instruction instructing the reception apparatus to cache only the first additional data; and

use instruction broadcasting step for broadcasting a use instruction after the start of the reproduction time period, the use instruction instructing the reception apparatus to use, when the first additional data has been cached according to the cache instruction, the cached additional data.

51. (Cancelled)

52. (Previously Presented) A broadcast method for receiving multiplexed data which is made up of program data which is to be reproduced by a reception apparatus soon after receipt and additional data which corresponds to the program data so that a total bandwidth is allocated to a predetermined bandwidth, the reception method comprising:

a receiving step for receiving

first multiplexed data transmitted by (a) repetitively multiplexing, from a predetermined time period before a start of a broadcast time period for first program data to an end of a broadcast time period for second program data, an additional data group including first

additional data that corresponds to the first program data with the second program data, and (b) singly multiplexing, with the multiplexed additional data group and second program, a cache instruction instructing to cache only the first additional data, the second program data being reproduced before the first program data, and

second multiplexed data transmitted by (a) repetitively multiplexing the first additional data group with the first program data, during the broadcast time period and (b) singly multiplexing a use instruction with the multiplexed first additional data group and first program data, the use instruction instructing to use, (i) when the first additional data has been cached, the cached first additional data, and (ii) when the first additional data has not been cached, the received first additional data;

a reproducing step for reproducing the first program data of the first multiplexed data during the broadcast time period for the first program data;

a caching step for caching, when the receiving step receives the first additional data of the first multiplexed data, the first additional data according to the cache instruction; and

a using step for using, according to the use instruction during the broadcast time period, (a) when the first additional data has been cached, the cashed first additional data, and (b) when the first additional data has not been cached, the first additional data of the second multiplexed data.

53. (Cancelled)

54. (Currently Amended) A computer-readable medium storing a broadcast program for causing a broadcast apparatus to operate by multiplexing and broadcasting program data

which is to be reproduced by a reception apparatus soon after receipt and additional data which corresponds to the program data, the broadcast program having a computer execute:

an acquiring step for acquiring first program data, a first additional data group including at least first additional data corresponding to the first program data, a broadcast time period of the first program data, and second program data which is to be broadcast before the first program data;

a multiplexing step for repeatedly multiplexing the first additional data group with the second program data from a specific time to a start of the broadcast time period and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period, the specific time being a point in time before the start of the broadcast time period, and a time period between the specific time and the start of the broadcast time period being a predetermined time period;

a broadcasting step for broadcasting the data multiplexed in the multiplexing step;

cache instruction broadcasting step for broadcasting a cache instruction before the start of the reproduction time period, the cache instruction instructing the reception apparatus to cache only the first additional data; and

use instruction broadcasting step for broadcasting a use instruction after the start of the reproduction time period, the use instruction instructing the reception apparatus to use, when the first additional data has been cached according to the cache instruction, the cached additional data.

55. (Currently Amended) A computer-readable medium storing a broadcast program for causing a broadcast apparatus to operate by multiplexing and broadcasting program data

which is to be reproduced by a reception apparatus soon after receipt and additional data corresponding to the program data, the broadcast program having a computer execute:

an acquiring step for acquiring first program data, a first additional data group including at least first additional data corresponding to the first program data, a broadcast time period of the first program data, second program data to be broadcast before the first program data, second additional data corresponding to the second program data, and a broadcast time period of the second program data;

a judging step for judging, for each of the broadcast time period of the first program data and the broadcast time period of the second program data, whether the broadcast time period is shorter than a predetermined criterion time period;

a multiplexing step for,

(a) in a first case where the broadcast time period of the first program data is shorter than the predetermined criterion time period and the broadcast time period of the second program data is no shorter than the predetermined criterion time period, repeatedly multiplexing the second additional data group with the second program data until a specific time, repeatedly multiplexing the first additional data group with the second program data from the specific time to a start of the broadcast time period of the first program data, and repeatedly multiplexing the first additional data with the first program data during the broadcast time period of the first program data, the specific time being a point in time before the start of the broadcast time period of the first program data, and a time period between the specific time and the start of the broadcast time period of the first program data being a predetermined time period,

(b) in a second case where the broadcast time period of the first program data and the broadcast time period of the second program data are each shorter than the

predetermined criterion time period, repeatedly multiplexing the second additional data and the first additional data group with the second program data from the specific time to the start of the broadcast time period of the first program data and repeatedly multiplexing the first additional data group with the first program data during the broadcast time period of the first program data, and

(c) in a third case where the broadcast time period of the first program data is no shorter than the predetermined criterion time period, regardless of whether the broadcast time period of the second program data is shorter than the predetermined criterion time period, repeatedly multiplexing the second additional data with the second program data until the start of the broadcast time period of the first program data and repeatedly multiplexing the first additional data with the first program data during the broadcast time period of the first program data; and

a broadcasting step for broadcasting the data multiplexed in the multiplexing step;

cache instruction broadcasting step for broadcasting a cache instruction before the start of the reproduction time period, the cache instruction instructing the reception apparatus to cache only the first additional data; and

use instruction broadcasting step for broadcasting a use instruction after the start of the reproduction time period, the use instruction instructing the reception apparatus to use, when the first additional data has been cached according to the cache instruction, the cached additional data.

56. (Cancelled)

57. (Currently Amended) A computer-readable medium storing a reception program for causing a reception apparatus to operate by receiving multiplexed data which is made up of program data which is to be reproduced by [[a]] the reception apparatus soon after receipt and additional data which corresponds to the program data so that a total bandwidth is allocated to a predetermined bandwidth, the reception program having a computer execute:

a receiving step for receiving

first multiplexed data transmitted by (a) repetitively multiplexing, from a predetermined time period before a start of a broadcast time period for first program data to an end of a broadcast time period for second program data, an additional data group including first additional data that corresponds to the first program data with the second program data, and (b) singly multiplexing, with the multiplexed additional data group and second program, a cache instruction instructing to cache only the first additional data, the second program data being reproduced before the first program data, and

second multiplexed data transmitted by (a) repetitively multiplexing the first additional data group with the first program data, during the broadcast time period and (b) singly multiplexing a use instruction with the multiplexed first additional data group and first program data, the use instruction instructing to use, (i) when the first additional data has been cached, the cached first additional data, and (ii) when the first additional data has not been cached, the received first additional data;

a reproducing step for reproducing the first program data of the first multiplexed data during the broadcast time period for the first program data;

a caching step for caching, when the receiving step receives the first additional data of the first multiplexed data, the first additional data according to the cache instruction; and

a using step for using, according to the use instruction during the broadcast time period, (a) when the first additional data has been cached, the cashed first additional data, and (b) when the first additional data has not been cached, the first additional data of the second multiplexed data.

58. (Previously Presented) The broadcast apparatus of claim 20,

wherein, when the judging means judges that the broadcast time period of the second time period of the second program data is no longer than the predetermined criterion time period, the multiplexing means repeatedly multiplexes the second additional data and the first additional data with the second program data during the broadcast time period of the second program data.

59. (Previously Presented) The broadcast apparatus of claim 21,

wherein, when the judging means judges that the broadcast time period of the second time period of the second program data is no longer than the predetermined criterion time period, the multiplexing means repeatedly multiplexes the second additional data and the first additional data with the second program data during the broadcast time period of the second program data.

60. (Previously Presented) The broadcast apparatus of claim 20, further comprising:

criterion time period determining means for determining the predetermined criterion time period to be used by the judging means by multiplying a time period of a broadcast cycle of additional data by a predetermined coefficient.

61. (Previously Presented) The broadcast apparatus of claim 21, further comprising:

criterion time period determining means for determining the predetermined criterion time period to be used by the judging means by multiplying a time period of a broadcast cycle of additional data by a predetermined coefficient.

62. (Previously Presented) The broadcast apparatus of claim 25,

wherein, when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is no longer than the predetermined criterion time period, the multiplexing means repeatedly multiplexes the second additional data and the first additional data with the second program data during the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data.

63. (Previously Presented) The broadcast apparatus of claim 26,

wherein, when the judging means judges that the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data is no longer than the predetermined criterion time period, the multiplexing means repeatedly multiplexes the second additional data and the first additional data with the second program data during the time period from the last update time of the second additional data to the start of the broadcast time period of the first program data.

64. (Previously Presented) The broadcast apparatus of claim 25, further comprising:

criterion time period determining means for determining the predetermined criterion time period to be used by the judging means by multiplying a time period of a broadcast cycle of additional data by a predetermined coefficient.

65. (Previously Presented) The broadcast apparatus of claim 26, further comprising:

criterion time period determining means for determining the predetermined criterion time period to be used by the judging means by multiplying a time period of a broadcast cycle of additional data by a predetermined coefficient.

66. (Previously Presented) The broadcast apparatus of claim 30 further comprising:

criterion time period determining means for determining the predetermined criterion time period to be used by the judging means by multiplying a time period of a broadcast cycle of additional data by a predetermined coefficient.

67. (Previously Presented) The broadcast apparatus of claim 37,

wherein the accepting means further accepts, from the outside, an indication of the predetermined time period.

68. (Previously Presented) The broadcast apparatus of claim 38,

wherein the accepting means further accepts, from the outside, an indication of the predetermined time period.

69. (Previously Presented) The broadcast apparatus of claim 39,

wherein the accepting means further accepts, from the outside, an indication of the predetermined time period.

70. (Previously Presented) The broadcast apparatus of claim 40,

wherein the accepting means further accepts, from the outside, an indication of the predetermined time period.